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ABSTRACT

This study assesses the effect of informal faculty-student interaction in small groups on college students. The central hypothesis states that behavioral development of college students is enhanced by informal contact with faculty beyond normal associations during regular classroom periods. The sample consisted of 60 volunteer men and women undergraduate students enrolled in the College of Engineering at Michigan State University. Ten groups of students were randomly formed from the volunteers. Six of these were experimental groups which met with a volunteer faculty member assigned to meet with them. Three similar groups served as control groups and met without a professor. Student participation behavior was pre-tested and post-tested by the Omnibus Personality Inventory and behavior differences between experimental and control subjects were assessed at the end of the experimental treatment. The results of this study corroborate the findings of prior research that faculty members do not significantly influence student behavior development. One important exception, however, was that contact with a professor under these experimental conditions may have produced in students a greater concern for others and a greater tendency toward personal trusting relationships. Implications of these findings for higher education are suggested. (RSM)

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INFLUENCE OF THE FACULTY ON COLLEGE STUDENT DEVELOPMENT

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The folklore of college life would have us believe that close faculty-student relationships are a very good thing, indeed, and much to be desired in colleges and universities. Most of us in the student development profession believe this, and have helped to advance the concept. We have encouraged our teaching colleagues to spend more time with the students. We have designed elaborate schemes for bringing students and professors together outside the classroom. We have written catalog statements like these:

> "...close personal relationships maintained....between and among faculty, undergraduates and graduate students, made possible by a low faculty to student ratio of one to fourteen."
>
> "Opportunity for members of the faculty to have closer, informal association with students.....where student experiences will be deepened and widened....."
>
> "The many advantages of the small college are widely recognized--a closely knit faculty, more intimate student-faculty relationships....."

Yet, what do we really know about the value of close interaction between students and teachers? It is generally assumed that frequent informal faculty-student contact is desirable in colleges and universities, presumably on the grounds that such experiences contribute positively to the intellectual development of students. Yet the literature of higher education contains no specific evidence to demonstrate that close relationships between professors and students actually has any measurable impact upon student growth (Feldman and Newcomb, 1969).

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Research has amply demonstrated that facts and information may be acquired by students from programmed materials -- even from "ordinary books" -- at least as efficiently as from their professors. Nicholas Hobbs (1966) observed:

> It would seem that professors are not necessary at all. A television screen will do as well. Class size doesn't matter: like a cipher, a professor is divisible by a number of any magnitude, with quotient zero. When asked to list important influences in their college years, one group of students mentioned many things, including the cafeteria, and forgot to mention the faculty. The clincher was a study showing that students who were simply assigned the text learned more than students who had benefit of both text and instructor (p.202).

If the professors are ineffective as transmitters of information, it seems evident that the most defensible rationale for bringing faculty members and students together on a college campus is to provide an atmosphere within which a significant <u>human interaction</u> may take place. Since the assumption of benefit to students from close contact with their professors is basic to such programs as faculty advising, small student-faculty ratios, and faculty involvement in co-curricular affairs, there appeared the need for a systematic investigation of the effects of informal faculty-student interaction.

This study represents an experimental assessment of the effect on college students of informal faculty-student interaction in small groups. Volunteer student participants were engaged in a small group situation, some with a faculty participant, others without, and the resulting differential impact upon student behavior was assessed. Students in the experimental groups were exposed to greater contact

with members of the faculty of their college than they would ordinarily encounter in their collegiate experience. This close contact with a professor over several weeks provided a substantive test of the value of extensive faculty-student interaction.

The following assumptions underly the study: (1) college is a structured attempt to help students attain desired behaviors; (2) personal interaction with significant others is an effective way of inducing behavior change; (3) small group activity is a proven method for encouraging personal interaction; (4) college faculty members may serve as significant models of behaviors desired by students; (5) small group interaction with faculty members may provide a means for assisting students to change in ways associated with the objectives of higher education; (6) it is possible to measure such developmental changes with a standardized paper-and-pencil instrument.

The central hypothesis of this study was that the behavioral development of college students is enhanced by informal faculty-student contact which extends beyond that normally associated with formal classroom instruction.

Specifically, the principal experimental hypothesis tested was:

> Students who participate in informal small group interaction with a faculty member over a period of time demonstrate a difference in certain measured developmental behaviors from students who do not participate in such interaction.

Research Design

The study sample consisted of sixty volunteer men and women undergraduate students who were enrolled in the College of Engineering at Michigan State University during the Winter Term, 1969.

Ten groups of students were formed randomly from the volunteers. Six groups of five students each were "treated" experimentally, in that a volunteer faculty member was assigned to meet with them. Three similar groups of five served as control groups, meeting without a faculty member. The balance of the volunteers served as a non-participant control group. The experimental and treatment control groups were scheduled for a weekly two-hour meeting for eight weeks.[1]

Student participant behavior was pre-tested and post-tested on the fourteen dimensions of the Omnibus Personality Inventory. Behavior differences between students in the experimental and students in the control groups were examined at the end of the experimental treatment, utilizing analysis of covariance to assess experimental vs. control group differences on each OPI scale.

The experimental design was adapted from D. I. Campbell and J. C. Stanley's "Pre-test - Post-test Control Group Design" (1966). This procedure was selected because, although the possibility exists for "contamination" by reactive effects from a pretest, it provides a clear "base line" measurement of the criterion characteristics, and controls for most other important variables, including the effects of maturation, history, instrumentation, regression, selection, mortality, and for interactions among these variables. In addition, undesired

1. Actual meeting time for the treatment groups averaged eleven hours over the course of the experiment

effects resulting from imperfections in randomization are minimized in this way.

Specifically, the design of this experiment followed the paradigm:

(1) R O_1 X_1 O_2 (Experimental Section)

(2) R O_3 X_2 O_4 (Treatment Control Section)

(3) R O_5 O_6 (Non-participant Control Section)

in which the experimental and two control sections were randomly selected and assigned (R), and pretested (O_1 O_3 O_5). The experimental section was exposed to the experimental treatment (X_1). The "treatment control" section was exposed to the control treatment (X_2). The "non-participant control" section was given no treatment. All three sections were then post-tested (O_2 O_4 O_6).

The inclusion of both a "non-participant control" section, in which the student subjects met in small groups but without a faculty member, provided control for possible changes resulting from the group interaction itself, and for possible experimental effects, thus isolating the presence of a faculty member as the major independent variable in the experimental groups.

Faculty participants in the study completed a faculty-student social distance scale, the results of which were compared with those of the total faculty population of the college, utilizing a t-test for significance.

Follow-up interviews were held with student participants to assess their responses to the project, as a source of supplementary descriptive data.

Summary of the Data

Students who participated in this study were not a representative sample of their classmates in the College of Engineering. The forty-three participants who completed the experiment were significantly younger, more likely to be freshmen, and included a greater proportion of women than the total population of the college. Their major fields, however, were reasonably representative of the enrollments in the various engineering departments.

Samples of student behavior, in the form of scores on the Omnibus Personality Inventory, were the principal measures of the outcomes of this project. Analysis of covariance applied to the experimental vs. control group OPI score differences resulted in significance only in the case of the dimension Altruism (Tables 1, 2 and 3).

On a scale of attitudes toward closeness to undergraduate students, the faculty members who volunteered to participate in this project reported a significantly greater desire for personal relationships with students than did the total faculty of their college. The faculty generally favored moderately close relationships with the students (Table 4).

In a follow-up survey of the discussion group participants, much of the previous research on student attitudes and life-styles was confirmed. These students have found interpersonal relationships to be the most outstanding features of their college experience. They volunteered for the small group project seeking to meet other students and faculty. Although they were generally favorable toward their small group participation, they were disappointed that attendance was not

better, and that their initial expectations were only partially fulfilled. Improved interpersonal relationships resulted for many participants. This and a more favorable attitude toward engineering were notable reported outcomes of participation.

A review of tape recordings of the group discussions revealed a broad scope of topics, including curricula, the engineering profession, sexuality, politics, and university policies.

TABLE 1

OPI PRE-TEST AND POST-TEST MEANS AND STANDARD DEVIATIONS

SCALE	PRE-TEST		POST-TEST		NORMS*	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Thinking Introversion	24.5	7.0	25.0	6.8	25.3	7.9
Theoretical Orientation	22.8	4.5	23.8	4.4	19.6	5.7
Estheticism	10.0	5.4	10.2	5.0	12.2	5.2
Complexity	16.6	5.4	17.3	5.1	15.3	5.5
Autonomy	28.8	5.7	28.5	6.3	23.4	8.9
Religious Orientation	16.6	5.5	16.9	5.0	11.8	6.2
Social Extroversion	21.8	7.2	20.1	7.5	23.4	7.1
Impulse Expression	30.1	9.6	30.8	9.7	25.6	8.9
Personal Integration	32.0	8.5	31.0	10.3	29.9	10.5
Anxiety Level	13.5	3.4	12.5	4.1	12.3	4.6
Altruism	21.2	5.2	19.9	7.1	20.8	5.6
Practical Outlook	13.1	5.2	13.6	5.5	14.8	6.4
Masculinity - Femininity	32.7	6.0	33.0	5.8	28.4	7.1
Response Bias	14.2	3.7	13.6	3.6	13.4	4.4

*From OPI Manual

TABLE 2

GROUP MEAN CHANGE SCORES - OMNIBUS PERSONALITY INVENTORY

GROUP	OPI SCALE														
	TI	TO	Es	Co	Au	RO	SE	IE	PI	AL	Am	PO	MF	RB	TOTAL
X1	3.50	3.25	0.75	2.25	1.50	0.75	-0.75	-0.75	1.50	0.00	-1.00	-1.75	2.75	2.25	15.25
X2	0.25	-0.50	0.50	2.00	2.50	2.25	-1.25	4.25	-2.75	-1.50	0.00	0.00	-2.00	0.00	3.75
X3	1.00	1.25	2.75	1.50	-2.25	2.75	-1.75	0.75	-2.00	-2.00	-1.50	3.75	-0.25	1.50	5.50
X4	-0.33	-3.33	-1.67	-1.67	0.67	0.33	-1.33	2.00	-4.33	-1.67	0.67	0.67	-2.00	-0.33	-9.00
X5	4.25	0.50	-1.00	0.50	1.75	1.75	-0.25	0.00	1.25	2.00	2.00	0.50	2.00	0.25	15.50
X6	-2.25	0.50	0.50	2.50	-0.25	-0.25	-3.25	-2.50	1.25	0.25	2.00	-1.00	-1.25	-0.50	-4.25
C1	-1.25	-2.75	-0.75	-1.25	-0.50	-3.00	-1.00	-0.75	-2.00	-2.75	-3.00	1.25	2.00	-1.75	-17.50
C2	-0.50	-1.50	-0.50	4.00	1.25	0.00	-3.00	5.75	-5.75	-2.25	-4.00	-1.00	1.00	-2.00	-7.50
C3	0.00	1.25	1.25	0.25	0.75	0.75	-1.25	-1.50	-2.75	-1.00	-3.25	-1.75	-0.25	-4.00	-11.25
Non-Treatment Controls	0.00	0.14	0.14	-1.28	-2.28	1.14	0.57	-0.28	-1.28	-1.28	-3.00	1.57	1.28	0.43	-4.14

TABLE 3

ANALYSIS OF CO-VARIANCE SUMMARY DATA -
OPI ALTRUISM SCALE

SOURCE	Degrees of Freedom	Adjusted Sum of Squares	Adjusted Mean Squares	F	P
Between Experimental Groups	5	46.8560	9.3712	0.5844	$<$ .7117
Experimentals vs. Controls	2	143.5604	71.7802	4.4765	$<$.0194
Between Control Groups	2	8.7270	4.3635	0.2721	$<$.7636
Within Experimental Groups (Error)	32	523.3878	16.3559	—	—

TABLE 4

FACULTY-STUDENT SOCIAL DISTANCE SCALE - FREQUENCY DISTRIBUTION

SCALE		ALL FACULTY	PARTICIPANTS
(0)	I prefer to have nothing to do with undergraduate students.	1	0
(1)		0	0
(2)	I prefer to deal with undergraduates only in the formal classroom or laboratory situation.	0	0
(3)		0	0
(4)	I am willing to teach undergraduate students and to work with them in academic-related situations.	11	0
(5)		15	0
(6)	I am interested in working with undergraduate students in out of class activities as well as academic-related and classroom situations.	7	1
(7)		15	1
(8)	I am interested in helping undergraduate students with personal as well as academic matters.	7	2
(9)		5	1
(10)	I am interested in having undergraduate students as my personal friends.	9	1

All Faculty: N = 70, M = 6.5, s = 2.10

Participants: N = 6, M = 8.0, s = 1.41

s_x = .63

z = -2.38

Discussion

The assumption in higher education that the faculty plays a critical role in the educational development of the students is so firmly established by tradition as to be considered a truism. Research, however, has failed to support the traditional faculty position that students benefit from close contact with their teachers. Little evidence exists to suggest that the faculty significantly influence student behavior development.

The results of this study of faculty impact on students generally corroborate the findings of prior research, with one important exception. The data herein suggest that close contact with a professor under these experimental conditions may have produced in students a greater concern for others, and a greater tendency toward personal, trusting relationships. With the number of different behavior measures represented by the fourteen OPI scales, it is possible that the resulting significant difference on one scale could be a statistical artifact. Nevertheless, when these data are viewed in the perspective of the over-all results of the study, a pattern of corroborating evidence appears.

The students who volunteered to participate in this project were younger than a representative sample of their fellows, more likely to be women, and more likely to be in their first year of college. Thus, in many ways they represented a relatively isolated segment of the student population. Younger students face many personal and academic uncertainties. Women are largely regarded as strangers in engineering. Underclassmen do not yet have identity with a specific major field, and are still "finding their way" in the multiversity.

The participants volunteered primarily to meet other students and faculty, evidencing a need for contact with other persons beyond their present circle. They met with faculty members who were extraordinarily interested in personal relationships with students. As a result of this experimental interaction with a caring faculty member, these students developed or maintained a greater concern for the welfare and feelings of others, while their peers who did not have such contact with the faculty were decreasing in the same behavior. Moreover, they reported gains in interpersonal relations and a more favorable attitude toward faculty as well.

The attitude toward students of the participating faculty was evidently an important factor. Compared with their teaching colleagues, these professors represent a sample of those who are highly concerned about students as persons, thus modelling that behavior which was found to change in the student participants.

The expressed student expectations from the discussion group meetings reflected a desire to meet other students and faculty members. After the treatment, subjects identified improved interpersonal relations as the most frequent gain from participation. They came <u>seeking</u> an environment within which to enjoy social exchange, and -- given the essential freedom to "create their own" environment -- <u>produced</u> a social situation which yielded personal growth in the area of interpersonal relationships, "help in getting along with others" and a "more favorable attitude toward engineering."

These findings must be interpreted within the parameters of this study, yet with some optimism as well. The experimental controls and

corroborating data strengthen the significance of the results. It may be concluded that out-of-class faculty-student contact can have a measurable impact upon student behavior. Matching the nature of that contact with the objectives of the students -- as we attempt to do in the classroom -- appears to be the critical variable.

College and university programs involving the faculty in various forms of contact with students are common. Professors are typically called upon to serve as "advisors" to students, to sponsor organizations, to attend and participate in a variety of campus activities. Deans, department chairmen, and student personnel workers regularly encourage faculty members to become "involved" with students outside the classroom.

The result of this research calls into question the assumption which apparently underlies the unquestioning support of such programs: that any contact between faculty members and students is valuable and will contribute to the desired growth of the students. The evidence from this and prior research is clear: most faculty-student interaction has little measurable impact upon students. However, when a faculty member is selected, because of particular competencies, to interact with students who are seeking those behaviors for which he may be an effective guide, measurable student behavior change may be effected.

A haphazard, catch-as-catch-can approach to interaction between students and faculty is of questionable value. Interactions which have been purposefully designed to accomplish specific objectives may demonstrate the value of close faculty-student contact beyond the classroom.

Conclusions

Over forty years ago, Alfred North Whitehead admonished educators to recognize that

> The students are alive, and the purpose of education is to stimulate and guide their self-development.

To facilitate an environment which encourages and supports student self-development is the task for those of us who believe that college should be a place within which an individual can become the person he wants to be.

The faculty play a key role in the campus environment. Yet, Joseph Katz (1968) has observed that the key to faculty-student interaction in the university is not "how much" but "how": "It is the nature of the contact, not its frequency, that is crucial" (p. 27). The findings of this study certainly support that view.

The experimental treatment involved the presence of a faculty member in randomly assigned groups of students. The groups were given no agenda, no program to follow, no specific objectives, no topics to discuss, and essentially no structure except the membership and an adjustable meeting schedule. The assumption implicit in the design of these groups was that simply exposing students to a weekly small group discussion with a faculty member would produce behavior change. In view of the findings reported herein, and in accord with the known principles of human learning (social modelling, behavior shaping), it is suggested that behavior change will take place as a result of an experience specifically designed to produce that change. Thus for

the present research, greater changes in student behavior could have been expected to result from interaction with a faculty member if that contact had been structured to provide the conditions leading to the desired change.

To the degree one may legitimately generalize from the results of this research, the following implications for higher education are suggested:

1. College students seek certain learning experiences in terms of their perceptions of the ways in which they will benefit therefrom. They look for contact with a faculty member in terms of their view of the role the professor may play in student learning. Typically, they see faculty members as information sources, and seek them out for information. If colleges wish to have professors sought by students as models for certain behaviors, the faculty role in relation to students must change considerably.
2. The real impacts of participation in the kind of human interaction which took place in these experimental small discussion groups are likely to appear over a longer period of time. Thus, some type of follow-up study on the participants in this and similar research is suggested to evaluate the impact of close student-faculty contact on such behaviors as self-concept, persistence in college,

persistence in a major field, attitudes toward the faculty and the profession, and dimensions of personality such as those measured by the Omnibus Personality Inventory.

3. Colleges and universities should promote "close faculty-student relations" only when the closeness is accompanied by a purposeful program to aid the growth and development of students toward their own goals. It is evident that the student peer group will continue to be the primary source of their satisfactions in interpersonal relationships. However, just as we have attempted to do in the classroom, student involvement with selected faculty members in situations designed to accomplish specific objectives can be of significant value.

4. Research should be undertaken which emphasizes the application of the principles of human learning to the definition of the conditions which may produce desired behavior change. By defining the ways in which faculty members may be of maximum value in influencing student self-development, we may determine important new and purposeful directions for faculty-student interaction in higher education.

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